APPENDIX

IN THE CLAIMS

Please cancel the following claims:

[8. (Cancelled) A production method of a multi-layered endless belt, comprising:

forming a laminate film by disposing a thermoplastic resin layer made of a thermoplastic polyimide resin or at least one resin selected from the group consisting of polyether sulfone, polyethylene terephthalate, polyethylene naphthalate, polyether ether ketone, polyphenylene sulfide, polyetherimide, polysulfone, polyamideimide, polyetheramide, and polyarylate, on an entire surface or a specific portion of both surfaces of a nonthermoplastic polyimide film;

winding the laminate film around an axial core for two or more winds; and

heat-welding with a heat source disposed in the inside and/or on the outside of the axial core.]

Please amend the following claims:

6. (Amended) A production method of a multi-layered endless belt, comprising:

[a laminate film forming step for] forming a laminate film by disposing an adhesive layer formed from at least one selected from the group consisting of epoxy resin, silicone resin, vinyl ester resin, phenolic resin, unsaturated polyester resin, bismaleimide resin, urethane resin, melamine resin, and urea resin, on an entire surf ace or a specific portion of one surface or both surf aces of a nonthermoplastic polyimide film;

[a winding step for] winding the laminate film at least two times around an axial core; and

[a heat-bonding step for] heat-bonding the laminate film wound around the axial core with a heat source disposed in the inside and/or on the outside of the axial core.

7. (Amended) A production method of a multi-layered endless belt, comprising:

[a laminate film forming step for] forming a laminate film by disposing a thermoplastic resin layer made of a thermoplastic polyimide resin or at least one resin selected from the group consisting of polyether sulfone, polyethylene terephthalate, polyethylene naphthalate, polyether ether ketone, polyphenylene sulfide, polyetherimide, polysulfone, polyamideimide, polyetheramide, and polyarylate, on an entire surface or a specific portion of one surface or both surfaces of a nonthermoplastic polyimide film;

[a winding step for] winding the laminate film around an axial core for two or more winds; and

[a heat-welding step for] heat-welding with a heat source disposed in the inside and/or on the outside of the axial core.

10. (Amended) The production method of a multi-layered endless belt according to any one of [claims 6-9] claims 6, 7, or 9, comprising a step of performing one or more surface treatments selected from the group consisting of an ozone processing, a coupling agent processing, a blast processing, and an etching processing, on said film.

11. (Amended) The production method of a multi-layered endless belt according to [any one of claims 6 to 9] claim 6, 7, or 9, wherein the axial core constructed with an axial core main body and an attachable and detachable thin tube fitted onto the axial core main body is used in said winding step.

12. (Amended) The production method of a multi-layered endless belt according to claim 11, wherein the attachable and detachable thin tube [having] has an adhesion preventive layer disposed on a surface thereof [is used in said winding step].

13. (Amended) The production method of a multi-layered endless belt according to any one of claims 6 [to 9], 7 or 9 wherein the winding step is performed under a reduced pressure atmosphere in said winding step.

14. (Amended) A production method of a medium conveying belt having an electrically conductive electrode pattern on an outer circumferential surface of a multi-layered endless belt and further having an electrode protective layer on an outer circumferential surface of the electrode pattern, the production method comprising:

a step of preparing a laminate film according to [any one of claims 6 to 9] claim 6 or a thermoplastic resin film;

a step of preparing a film with an electrode pattern by forming an electrode pattern for one circumferential length of a tubular object at one end on one surface of a monolayer film of the laminate film or thermoplastic resin;

a winding step of winding the film with the electrode pattern at least two times around an axial core so that the electrode pattern forms the outermost circumferential surface, and further winding a resin film for forming the electrode protective layer at least two times on a surface of the electrode pattern; and

a heat-welding step of heat-welding the film with the electrode pattern and the resin film for the electrode protective layer which are wound around the axial core.

15. (Amended) A production method of a medium conveying belt having an electrically conductive electrode pattern on an outer circumferential surface and an inner circumferential surface of a multi-layered endless belt and further having an electrode protective layer on an outer circumferential surface of the electrode pattern, the production method comprising:

a step of preparing a laminate film according to [any one of claims 6 to 9] claim 6 or a thermoplastic resin film;

a step of preparing a film with an electrode pattern by forming an electrode pattern for one circumferential length of a tubular object each at one end on one surface and at the other end on the opposite surface of the laminate film or thermoplastic resin film;

a winding step of winding the film with the electrode pattern at least two times around an axial core so that one electrode pattern forms the outermost circumferential surface and the other electrode pattern forms the innermost circumferential surface, and

further winding a resin film for forming the electrode protective layer at least two times on a surface of the electrode pattern; and

a heat-welding step of heat-welding the film with the electrode pattern and the resin film for the electrode protective layer which are wound around the axial core.

16. (Amended) A production method of a medium conveying belt having an electrically conductive electrode pattern on an outer circumferential surface of a multi-layered endless belt and further having an electrode protective layer on an outer circumferential surface of the electrode pattern, the production method comprising:

a step of preparing a laminate film according to [any one of claims 6 to 9] claim 6 or a thermoplastic resin film;

a step of preparing a film with an electrode pattern by forming an electrode pattern for one circumferential length of a tubular object on a part of one surface of a laminate film or the thermoplastic resin film;

a winding step of winding the film with the electrode pattern at least two times around an axial core; and

a heat-welding step of heat-welding the film with the electrode pattern wound around the axial core.

17. (Amended) A production method of a medium conveying belt having an electrically conductive electrode pattern on an outer circumferential surface and an inner circumferential surface of a multi-layered endless belt and further having an electrode protective layer on an outer circumferential surface of the electrode pattern, the production method comprising:

a step of preparing a laminate film according to [any one of claims 6 to 9] claim 6 or a thermoplastic resin film;

a step of preparing a film with an electrode pattern by forming an electrode pattern for one circumferential length of a tubular object on a part of one surface of a laminate film or the thermoplastic resin film and forming an electrode pattern for one circumferential length of a tubular object at one end of the opposite surface;

a winding step of winding the film with the electrode pattern at least two times around an axial core so that the electrode pattern at one end of the opposite surface forms the innermost circumferential surface; and

a heat-welding step of heat-welding the film with the electrode pattern and the resin film for the electrode protective layer which are wound around the axial core.

18. (Amended) A production method of a medium conveying belt of a structure having an electrically conductive electrode pattern on an outer circumferential surface of a multi-layered endless belt and further having an electrode protective layer on an outer circumferential surface of the electrode pattern, the production method comprising:

a step of preparing a laminate film according to [any one of claims 6 to 9] claim 6 or a thermoplastic resin film;

a step of drilling a hole through a monolayer film of the laminate film or the thermoplastic resin film so that the electrode pattern of the electrode protective layer will be exposed to the inside of the medium conveying belt after winding and heating, or preparing a film narrower than the electrode protective film in a direction perpendicular to the circumferential direction;

a winding step of winding the film with the electrode pattern at least two times around an axial core, and further winding a resin film for forming the electrode protective layer, which has the electrode pattern formed thereon, at least two times; and

a heat-welding step of heat-welding the film and the resin film for the electrode protective layer with the electrode pattern, which are wound around the axial core,

whereby an electric power can be supplied from the inside of the belt in applying a voltage to the electrode pattern between the two layers.

19. (Amended) A production method of a medium conveying belt of a structure having an electrically conductive electrode pattern on an outer circumferential surface of a multi-layered endless belt and further having an electrode protective layer on an outer circumferential surface of the electrode pattern, the production method comprising:

a step of preparing a laminate film according to [any of claims 6 to 9] claim 6 or a thermoplastic resin film;

a step of forming a film with an electrode pattern by forming an electrode pattern for one circumferential length of a tubular object at an end on one surface of the laminate film or the thermoplastic resin film;

a winding step of winding the film with the electrode pattern at least two times around an axial core so that the electrode pattern at one end of the opposite surface forms the innermost circumferential surface; and

a heat-welding step of heat-welding the film and the resin film for the electrode protective layer narrower than the film in a direction perpendicular to the circumferential direction, which are wound around the axial core; and

a post-processing step of bending the end together with the electrode pattern to the inside of the medium conveying belt for contact-bonding by heating, after molding the belt,

whereby an electric power can be supplied from the inside of the belt in applying a voltage to the electrode pattern between the two layers.

26. (Amended) The production method of a medium conveying belt according to [any one of claims 23 to 25] claim 23, wherein the cover bag has a rubber elasticity.

27. (Amended) The production method of a medium conveying belt according to any one of [claims 14 to 26] claims 14, 15, 16, 17, 18, or 19, wherein a filler having the maximum particle size of at most 5 μm is introduced into the material film or the thermoplastic resin film constituting said medium conveying belt.

28. (Amended) The production method of a medium conveying belt according to any one of [claims 14 to 26] claims 14, 15, 16, 17, 18, or 19, wherein an electric power supplying part is disposed only on one side.

33. (Amended) The endless belt molding apparatus according to claim 32, characterized in that the metal tube fitted onto the axial core main body has a thickness

of at least 0. 05 mm and at most 3 mm [, preferably at least 0.15 mm and at most 2 mm].

34. (Amended) The endless belt molding apparatus according to claim 32, characterized in that the heat-resistant resin tube fitted onto the axial core main body is made of a nonthermoplastic polyimide [(hereafter represented as PI)] having a thickness of at least 50 μm[, preferably at least 150 μm and at most 2 mm].

35. (Amended) The endless belt molding apparatus according to [any one of claims 32, 33, 34] claim 32, characterized in that a surface treatment having smoothness has been performed on a surface of the endless tube fitted onto the axial core main body.

36. (Amended) An endless belt molding method using an endless belt molding apparatus according to claim 30, characterized by increasing a period of time for attaching the wound films while maintaining the space b in a reduced-pressure state, and reducing the pressure of the space a after the wound films are attached, or by reducing the pressures of the space a and the space b after the wound films are attached while maintaining initial gaps in a state of an ordinary pressure [(atmospheric pressure)] as it is, so as to fully eliminate air between the wound films, and then introducing air or gas having a pressure higher than atmospheric pressure to the space b, and heating the whole wound films with heat supplied from a heating source while pressurizing the whole films via the elastic body, thereby to integrate the films for obtaining an endless belt.

Please add the following Claims:

40. (New) A production method of a medium conveying belt having an electrically conductive electrode pattern on an outer circumferential surface of a multi-layered endless belt and further having an electrode protective layer on an outer circumferential surface of the electrode pattern, the production method comprising:

a step of preparing a laminate film according to claim 7 or a thermoplastic resin film;

a step of preparing a film with an electrode pattern by forming an electrode pattern for one circumferential length of a tubular object at one end on one surface of a monolayer film of the laminate film or thermoplastic resin;

a winding step of winding the film with the electrode pattern at least two times around an axial core so that the electrode pattern forms the outermost circumferential surface, and further winding a resin film for forming the electrode protective layer at least two times on a surface of the electrode pattern; and

a heat-welding step of heat-welding the film with the electrode pattern and the resin film for the electrode protective layer which are wound around the axial core.

41. (New) A production method of a medium conveying belt having an electrically conductive electrode pattern on an outer circumferential surface and an inner circumferential surface of a multi-layered endless belt and further having an electrode protective layer on an outer circumferential surface of the electrode pattern, the production method comprising:

a step of preparing a laminate film according to claim 7 or a thermoplastic resin film;

a step of preparing a film with an electrode pattern by forming an electrode pattern for one circumferential length of a tubular object each at one end on one surface and at the other end on the opposite surface of the laminate film or thermoplastic resin film;

a winding step of winding the film with the electrode pattern at least two times around an axial core so that one electrode pattern forms the outermost circumferential surface and the other electrode pattern forms the innermost circumferential surface, and further winding a resin film for forming the electrode protective layer at least two times on a surface of the electrode pattern; and

a heat-welding step of heat-welding the film with the electrode pattern and the resin film for the electrode protective layer which are wound around the axial core.

42. (New) A production method of a medium conveying belt having an electrically conductive electrode pattern on an outer circumferential surface of a multi-

layered endless belt and further having an electrode protective layer on an outer circumferential surface of the electrode pattern, the production method comprising:

a step of preparing a laminate film according to claim 7 or a thermoplastic resin film;

a step of preparing a film with an electrode pattern by forming an electrode pattern for one circumferential length of a tubular object on a part of one surface of a laminate film or the thermoplastic resin film;

a winding step of winding the film with the electrode pattern at least two times around an axial core; and

a heat-welding step of heat-welding the film with the electrode pattern wound around the axial core.

43. (New) A production method of a medium conveying belt having an electrically conductive electrode pattern on an outer circumferential surface and an inner circumferential surface of a multi-layered endless belt and further having an electrode protective layer on an outer circumferential surface of the electrode pattern, the production method comprising:

a step of preparing a laminate film according to claim 7 or a thermoplastic resin film;

a step of preparing a film with an electrode pattern by forming an electrode pattern for one circumferential length of a tubular object on a part of one surface of a laminate film or the thermoplastic resin film and forming an electrode pattern for one circumferential length of a tubular object at one end of the opposite surface;

a winding step of winding the film with the electrode pattern at least two times around an axial core so that the electrode pattern at one end of the opposite surface forms the innermost circumferential surface; and

a heat-welding step of heat-welding the film with the electrode pattern and the resin film for the electrode protective layer which are wound around the axial core.

44. (New) A production method of a medium conveying belt of a structure having an electrically conductive electrode pattern on an outer circumferential surface of a multi-layered endless belt and further having an electrode protective layer on an outer circumferential surface of the electrode pattern, the production method comprising:

a step of preparing a laminate film according to claim 7 or a thermoplastic resin film;

a step of drilling a hole through a monolayer film of the laminate film or the thermoplastic resin film so that the electrode pattern of the electrode protective layer will be exposed to the inside of the medium conveying belt after winding and heating, or preparing a film narrower than the electrode protective film in a direction perpendicular to the circumferential direction;

a winding step of winding the film with the electrode pattern at least two times around an axial core, and further winding a resin film for forming the electrode protective layer, which has the electrode pattern formed thereon, at least two times; and

a heat-welding step of heat-welding the film and the resin film for the electrode protective layer with the electrode pattern, which are wound around the axial core,

whereby an electric power can be supplied from the inside of the belt in applying a voltage to the electrode pattern between the two layers.

45. (New) A production method of a medium conveying belt of a structure having an electrically conductive electrode pattern on an outer circumferential surface of a multi-layered endless belt and further having an electrode protective layer on an outer circumferential surface of the electrode pattern, the production method comprising:

a step of preparing a laminate film according to claim 7 or a thermoplastic resin film;

a step of forming a film with an electrode pattern by forming an electrode pattern for one circumferential length of a tubular object at an end on one surface of the laminate film or the thermoplastic resin film;

a winding step of winding the film with the electrode pattern at least two times around an axial core so that the electrode pattern at one end of the opposite surface forms the innermost circumferential surface; and

a heat-welding step of heat-welding the film and the resin film for the electrode protective layer narrower than the film in a direction perpendicular to the circumferential direction, which are wound around the axial core; and

a post-processing step of bending the end together with the electrode pattern to the inside of the medium conveying belt for contact-bonding by heating, after molding the belt,

whereby an electric power can be supplied from the inside of the belt in applying a voltage to the electrode pattern between the two layers.

46. (New) The production method of a medium conveying belt according to any one of claims 40, 41, 42, 43, 44, or 45, wherein an electrical conduction is established between the electrode pattern and the inside surface of the medium conveying belt by drilling a hole through the medium conveying belt and forming a through-hole with an electrically conductive paste, or by processing with an electrically conductive fiber using a sewing machine, or by using an eyelet, a stapler, or another method, whereby an electric power can be supplied from the inside of the belt in applying a voltage to the electrode pattern between the two layers.

47. (New) The production method of a medium conveying belt according to any one of claims 40, 41, 42, 43, 44, or 45, wherein the axial core used in said winding step comprises a main body and an attachable and detachable thin metal layer fitted on the main body.

48. (New) The production method of a medium conveying endless belt according to claim 47, wherein said attachable and detachable thin metal layer has an adhesion preventive layer disposed on a surface thereof.

49. (New) The production method of a medium conveying belt according to any one of claims 40, 41, 42, 43, 44, or 45, wherein said heat-welding step comprises:

a step of attaching a tubular cover bag on an outermost circumferential surface of the wound electrode protective layer to cover the whole of the film with the electrode pattern and the electrode protective layer with the cover bag; and

a step of heat-welding the film with the electrode pattern and the electrode protective layer in a state in which an outside of the cover bag receives a pressure higher than a pressure applied to an inside of the cover bag.

50. (New) The production method of a medium conveying belt according to claim 49, wherein a surface roughness Ra of the inside of said tubular cover bag is at most 0.5 μm.

51. (New) The production method of a medium conveying belt according to claim 49, wherein a surface roughness Rz of the inside of said tubular cover bag is at most 2.0 μm.

52. (New) The production method of a medium conveying belt according to any one of claims 49, wherein the cover bag has a rubber elasticity.

53. (New) The production method of a medium conveying belt according to any one of claims 40, 41, 42, 43, 44, or 45, wherein a filler having maximum particle size of at most 5 μm is introduced into the material film or the thermoplastic resin film constituting said medium conveying belt.

54. (New) The production method of a medium conveying belt according to any one of claims 40, 41, 42, 43, 44, or 45, wherein an electric power supplying part is disposed only on one side.

55. (New) A production method of a medium conveying belt having an electrically conductive electrode pattern on an outer circumferential surface of a multi-layered endless belt and further having an electrode protective layer on an outer circumferential surface of the electrode pattern, the production method comprising:

a step of preparing a laminate film according to claim 9 or a thermoplastic resin film;

a step of preparing a film with an electrode pattern by forming an electrode pattern for one circumferential length of a tubular object at one end on one surface of a monolayer film of the laminate film or thermoplastic resin;

a winding step of winding the film with the electrode pattern at least two times around an axial core so that the electrode pattern forms the outermost circumferential

surface, and further winding a resin film for forming the electrode protective layer at least two times on a surface of the electrode pattern; and

a heat-welding step of heat-welding the film with the electrode pattern and the resin film for the electrode protective layer which are wound around the axial core.

56. (New) A production method of a medium conveying belt having an electrically conductive electrode pattern on an outer circumferential surface and an inner circumferential surface of a multi-layered endless belt and further having an electrode protective layer on an outer circumferential surface of the electrode pattern, the production method comprising:

a step of preparing a laminate film according to claim 9 or a thermoplastic resin film;

a step of preparing a film with an electrode pattern by forming an electrode pattern for one circumferential length of a tubular object each at one end on one surface and at the other end on the opposite surface of the laminate film or thermoplastic resin film;

a winding step of winding the film with the electrode pattern at least two times around an axial core so that one electrode pattern forms the outermost circumferential surface and the other electrode pattern forms the innermost circumferential surface, and further winding a resin film for forming the electrode protective layer at least two times on a surface of the electrode pattern; and

a heat-welding step of heat-welding the film with the electrode pattern and the resin film for the electrode protective layer which are wound around the axial core.

57. (New) A production method of a medium conveying belt having an electrically conductive electrode pattern on an outer circumferential surface of a multi-layered endless belt and further having an electrode protective layer on an outer circumferential surface of the electrode pattern, the production method comprising:

a step of preparing a laminate film according to claim 9 or a thermoplastic resin film;

a step of preparing a film with an electrode pattern by forming an electrode pattern for one circumferential length of a tubular object on a part of one surface of a laminate film or the thermoplastic resin film;

a winding step of winding the film with the electrode pattern at least two times around an axial core; and

a heat-welding step of heat-welding the film with the electrode pattern wound around the axial core.

58. (New) A production method of a medium conveying belt having an electrically conductive electrode pattern on an outer circumferential surface and an inner circumferential surface of a multi-layered endless belt and further having an electrode protective layer on an outer circumferential surface of the electrode pattern, the production method comprising:

a step of preparing a laminate film according to claim 9 or a thermoplastic resin film;

a step of preparing a film with an electrode pattern by forming an electrode pattern for one circumferential length of a tubular object on a part of one surface of a laminate film or the thermoplastic resin film and forming an electrode pattern for one circumferential length of a tubular object at one end of the opposite surface;

a winding step of winding the film with the electrode pattern at least two times around an axial core so that the electrode pattern at one end of the opposite surface forms the innermost circumferential surface; and

a heat-welding step of heat-welding the film with the electrode pattern and the resin film for the electrode protective layer which are wound around the axial core.

59. (New) A production method of a medium conveying belt of a structure having an electrically conductive electrode pattern on an outer circumferential surface of a multi-layered endless belt and further having an electrode protective layer on an outer circumferential surface of the electrode pattern, the production method comprising:

a step of preparing a laminate film according to claim 9 or a thermoplastic resin film;

a step of drilling a hole through a monolayer film of the laminate film or the thermoplastic resin film so that the electrode pattern of the electrode protective layer will be exposed to the inside of the medium conveying belt after winding and heating, or preparing a film narrower than the electrode protective film in a direction perpendicular to the circumferential direction;

a winding step of winding the film with the electrode pattern at least two times around an axial core, and further winding a resin film for forming the electrode protective layer, which has the electrode pattern formed thereon, at least two times; and

a heat-welding step of heat-welding the film and the resin film for the electrode protective layer with the electrode pattern, which are wound around the axial core,

whereby an electric power can be supplied from the inside of the belt in applying a voltage to the electrode pattern between the two layers.

60. (New) A production method of a medium conveying belt of a structure having an electrically conductive pattern on an outer circumferential surface of a multi-layered endless belt and further having an electrode protective layer on an outer circumferential surface of the electrode pattern, the production method comprising:

a step of preparing a laminate film according to claim 9 or a thermoplastic resin film;

a step of forming a film with an electrode pattern by forming an electrode pattern for one circumferential length of a tubular object at an end on one surface of the laminate film or the thermoplastic resin film;

a winding step of winding the film with the electrode pattern at least two times around an axial core so that the electrode pattern at one end of the opposite surface forms the innermost circumferential surface; and

a heat-welding step of heat-welding the film and the resin film for the electrode protective layer narrower than the film in a direction perpendicular to the circumferential direction, which are wound around the axial core; and

a post-processing step of bending the end together with the electrode pattern to the inside of the medium conveying belt for contact-bonding by heating, after molding the belt,

whereby an electric power can be supplied from the inside of the belt in applying a voltage to the electrode pattern between the two layers.

61. (New) The production method of a medium conveying belt according to any one of claims 55, 56, 57, 58, 59, or 60, wherein an electrical conduction is established between the electrode pattern and the inside surface of the medium conveying belt by drilling a hole through the medium conveying belt and forming a through-hole with an

electrically conductive paste, or by processing with an electrically conductive fiber using a sewing machine, or by using an eyelet, a stapler, or another method, whereby an electric power can be supplied from the inside of the belt in applying a voltage to the electrode pattern between the two layers.

62. (New) The production method of a medium conveying belt according to any one of claims 55, 56, 57, 58, 59, or 60, wherein the axial core used in said winding step comprises a main body and an attachable and detachable thin metal layer fitted onto the main body.

63. (New) The production method of a medium conveying belt according to claim 62, wherein said attachable and detachable thin metal layer has an adhesion preventive layer disposed on a surface thereof.

64. (New) The production method of a medium conveying belt according to any one of claims 55, 56, 57, 58, 59, or 60 wherein said heat-welding step comprises:

a step of attaching a tubular cover bag on an outermost circumferential surface of the wound electrode protective layer to cover the whole of the film with the electrode pattern and the electrode protective layer with the cover bag; and

a step of heat-welding the film with the electrode pattern and the electrode protective layer in a state in which an outside of the cover bag receives a pressure higher than a pressure applied to an inside of the cover bag.

65. (New) The production method of a medium conveying belt according to claim 64, wherein a surface roughness Ra of the inside of said tubular cover bag is at most 0.5 μm.

66. (New) The production method of a medium conveying belt according to claim 64, wherein a surface roughness Rz of the inside of said tubular cover bag is at most 2.0 μm.

67. (New) The production method of a medium conveying belt according to claim 64, wherein the cover bag has a rubber elasticity.

68. (New) The production method of a medium conveying belt according to any one of claims 55, 56, 57, 58, 59, or 60, wherein a filler having the maximum particle size of at most 5 μm is introduced into the material film or the thermoplastic resin film constituting said medium conveying belt.

69. (New) The production method of a medium conveying belt according to any one of claims 55, 56, 57, 58, 59, or 60, wherein an electric power supplying part is disposed only on one side.